

Working DRAFT for January 26 March 2, 2007 Meeting

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h. Not allow perforated casing to extend into or through any confining layer that would otherwise prevent the migration of water from one zone to another. ()

03. Requirement for Integrity of Casing and Liners. The Well Driller shall install casing and liners of sufficient strength to withstand normal subsurface forces and corrosive effects. ()

031. STANDARDS FOR STEEL CASING AND LINERS (RULE 31).

01. Minimum Steel Casing Specifications. The Well Driller shall install steel casing that meets or exceeds the American Society of Testing and Materials (ASTM) standard A53, Grade B or American Petroleum Institute (API) 5L Grade B, and that meets the following specifications: ()

Minimum Single-Wall Steel Well Casing Thickness for Selected Diameters (in.)

| Nominal Diameter (in.) | 6 ¹ | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 |
|------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-----------------|-----------------|
| Depth (ft.) | Nominal Wall Thickness (in.) | | | | | | | | | |
| <100 | 0.109 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.313 | 0.313 |
| 100-200 | 0.141 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.313 | 0.313 |
| 200-300 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.313 | 0.313 | 0.313 | 0.313 |
| 300-400 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.313 | 0.313 | 0.313 | 0.375 | 0.375 |
| 400-600 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.313 | 0.313 | 0.313 | 0.375 | 0.438 |
| 600-800 | 0.250 | 0.250 | 0.250 | 0.250 | 0.250 | 0.313 | 0.313 | 0.375 | 0.375 | 0.438 |
| 800-1000 | 0.250 | 0.250 | 0.250 | 0.250 | 0.313 | 0.313 | 0.313 | 0.375 | 0.438 | 0.50 |
| 1000-1500 | 0.250 | 0.250 | 0.313 | 0.313 | 0.313 | 0.375 | 0.375 | 0.375 | -- ² | -- ² |
| 1500-2000 | 0.250 | 0.250 | 0.313 | 0.313 | 0.313 | 0.375 | 0.375 | 0.438 | -- ² | -- ² |

¹For nominal casing diameters less than 6 inches, the minimum nominal wall thickness shall be equivalent to ASTM Schedule 40. ²For 24 and 30 inch nominal casing diameters below 1000 feet, and for any other casing diameter not addressed herein, prior Department approval is required. ()

02. Additional Requirements for Steel Casing and Liner. The Well Driller shall: ()

a. Join casing and liner lengths by welded or threaded joints; and ()

b. Ensure that welded joints are made using welding rods of at least equal quality to the casing metal, are at least as thick as the wall thickness of the well casing, and are fully penetrating. Casing ends to be joined by welding shall be properly prepared, beveled and gapped to allow full penetration of the weld. Welded joints shall have a minimum of two (2) passes including a "root" pass and have minimal undercut when complete. ()

032. -- 039. (RESERVED).

040. STANDARDS FOR THERMOPLASTIC PIPE CASING AND LINERS (Rule 40).

Thermoplastic pipe used as casing or liner shall conform to ASTM F 480 and NSF-WC. ()

01. Conditions for the Use of Thermoplastic Pipe Casing and Liners. ()

a. Thermoplastic pipe may be used as casing in all monitoring wells. Thermoplastic pipe used as casing in monitoring wells shall have a minimum rating of schedule 40. If used as casing within unstable units, thermoplastic pipe shall be centralized and supported as described in Rule 040.b.iii below. ()

b. Thermoplastic pipe may be used as a-casing or liner in other wells only when drilling of the borehole confirms its suitability for use. The conditions for use of thermoplastic pipe as casing in other wells shall conform to the following: ()

i. ~~Competent~~Stable Units: Thermoplastic pipe having a minimum rating of SDR 21 may be used